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												9O 8804 SMA 9O						
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												QQ-A-225/8 OR AMS					1	
												90 8/00S-A-DD 90						
												8\007-T-WW A39 2A						
												SEAMLESS TUBING						1
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	2 S.50 / pcs	12/19/2017	Stock	2052047		240	12/21/2017	540					820.W3S1E.0T3T1303M	Net 30	L	ı	-100MWT	2
		and	- que	ON	oN dot	Quantity	2.71	. 1	CII		oN					oN		1
	Price/Unit		Status		Accounting		Due	12010	Equipment ID	Project	Part	Description	Purchased Item	Terms	-14	Item	Supplier	ON
7		Весеі vе		Sprin	Daitanona	Peviene	OII I	TahT()	tramminn 4	S S SS	For	2002 30 90000	1000000 11 10000 VALUE		Rel	Pine	1000	1 200

Plex 12/19/2017 11:22 AM Dart. Dubois. Pascal

PURCHASE ORDER PO038640

Dart Aerospace Ltd. 1270 Aberdeen St Hawkesbury, ON KEA 1K7



			71/81/ 0038640		No: Date:		upplier: TWM001-VU TW Metals			
				71/17		Date:		V3117706 6	PO Box 933014	
	U	BILLE	M C	,		chase Orc			Altanta, GA 3119: Phone: 585 768 5	
	a				:noisi			Fax: 585 768 560		
		13 2017	, 110	100m 1000	:ә	ision Dat				
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				4 30 puno		nt Terms:	:siV		ON K6A 1K7 Canada	
				00.1		ght Terms	2520		Phone: 613-632-9	
-						cial Comi				
ŀ							Items			
The second second	Extended Price	JinU Price (USD)	Spueled	Received	Order	Due	Status	noitringed	The q	əni.
ŀ	93114	Price (USD) \$2.50/pcs	240 pcs		Quantity 240 pcs	Date 12/21/17		Description N850. X 3125 X .058W		mei tem
			1					: MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS		
								TUBING AS PER WW-T-700/8		
								OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82		
								OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210		
1	/							DR ASTM B241		
	02.691\$,¥/04.E\$	# 84	# O	# 84	12/21/17	Permi	receive ft 6061-16 Round Tube .375	260.W376.0T3T1303M	2
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								: MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS		
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				124				OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82		
			-					0158 MT2A 9O 8804 2MA 9O		
								OR ASTM B241 receive ft		
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		and in	and see	and c	and size			X.058W		
	-			11				: MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS		
				21/	- 19			TUBING AS PER WW-T-700/8	/	
				ممدي				OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82		
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				3				7A STM B241 receive ft		1
	89.951\$	#/16.5\$	# 84	11 0	# 84	12/21/17	Firmed	00č. aduT bnuoЯ aT-1806		1 7
				(10)				X.049W MATERIAL: 6061-		
				37	7			TG/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8		
								8/522-A-200/8 OR QQ-A-225/8		
								S8 04 2MA 9O 0804 2MA 9C 01SB MT2A 9O 8804 2MA 9C		
- 1								1428 MTSA AC		

	Set Notes								
88.839,1\$:latoT bna1	9							
00'042\$	¥/00'+\$	14 09 N	# O	¥ 09	71/12/21	Firmed	W\$80, X 000. Sund Tube .600 X 083W : MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6736 OR AMS 6371/6360/6361/6362 \$13/63/674 If eveive If	E80.W002.0TN0E14M	g
Extended Price	Unit Price (USD)	Balance	Received Quantity	Order Quantity	Date Date	Status	Description	Part	eni. met
						smati			

Procurement Quality Clauses

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable)

A026 certification of material conformance

A041 quality management system A042 dart notification by supplier

A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 12/13/17 2:22 PM dart.lavoie.chantal





Packing Slip

ORDER NO.: 60645909 FROM: CRAN

PAGE

CUST NUMBER: 1203820 NET WGT:

HAWKESBURY ON

SALESPERSON:

57.669 REQ.DATE: 12/21/17 CONFIRMED

SOLD TO:

DART AEROSPACE LTD

1270 ABERDEEN ST

SHIP TO: DART AEROSPACE LTD

1270 ABERDEEN ST

HAWKSBURY ON

ONTARIO CANADA

CN K6A 1K7

CANADA

CN K6A 1K7

SHIP BY:

12/14/17

TERMS:

DONNA SMALLEY NET 30 DAYS

VIA: COMMON CARRIER

F.O.B.:

SHIPPING POINT

PREPAID

CUST ORD NO.: PO038640

RELEASE NO.:

FREIGHT:

RECEIVING PHONE:

LENGTH

LINE ITEM DESCRIPTION

0001 41723 D6061-T6 5/16 OD X .058 WA

WIDTH

12 FT ML

CLN#

ORD QTY

INVOICE OTY

SHIPPED QTY

WT

240.000 FT

240.000 FT

240.000 FT

13.104

1 TEST REPORTS REQUIRED **

1 CERTS REQUIRED **

ECCN: EAR99

Export License: NLR Expiration Date: 0/00 PC: 20 CUSTOMER QTY: 240.000 UON

PO:49379694 HT:2806820

MLT:UNITED STATES MFG:UNITED STATES

SLB/CL: 474075

0002 41879 D6061-T6 3/8 DD X

12 FT ML

CLN#

ORD QTY 48.000 FT INVOICE OTY

SHIPPED QTY

48.000

48.000 FT

2.108

1 TEST REPORTS REQUIRED **

1 CERTS REQUIRED **

ECCN: EAR99

Export License: NLR PO:49364047 HT: F002343910001 PC: 1 CUSTOMER QTY: 12.000 UO

Expiration Date: 0/0

MLT:UNITED STATES MFG:UNITED STATES SLB/CL:222468 PO:49378065 HT:F002527800001 PC: 3 CUSTOMER QTY MLT:UNITED STATES MFG:UNITED STATES

CUSTOMER QTY: SLB/CL:224433

48.000

0003 41952\D6061-T6 3/8 OD X .058 WA

12 FT ML

CLN#

ORD OTY 240.000 FT

INVOICE OTY 240.000 FT SHIPPED QTY 240.000 FT WT

1 TEST REPORTS REQUIRED **

1 CERTS REQUIRED **

Expiration Date: 0/00/00 240.000 UOM FT

MLT:UNITED STATES MFG:UNITED STATES

SLB/CL:224194

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.

http://www.twmetals.com/invoice-terms.html





Packing gil

ORDER NO.: 60645909 FROM: CRAN PAGE

CUST NUMBER: 1203820 NET WGT:

57.669 REQ.DATE: 12/21/17 CONFIRMED

SOLD TO:

SHIP TO:

DART AEROSPACE LTD 1270 ABERDEEN ST

DART AEROSPACE LTD 1270 ABERDEEN ST

HAWKESBURY ON

HAWKSBURY ON ONTARIO CANADA

CANADA

CN K6A 1K7

SHIP BY:

12/14/17

SALESPERSON: DONNA SMALLEY NET 30 DAYS

VIA: COMMON CARRIER

TERMS: F.O.B.:

SHIPPING POINT

FREIGHT:

RELEASE NO.:

CUST ORD NO.: PO038640

RECEIVING PHONE:

WIDTH LENGTH

PREPAID

LINE ITEM DESCRIPTION

0004 4225% D6061-T6 1/2 OD X .049 WA

12 FT ML

CLN#

ORD QTY 48.000 FT NVOICE QTY 48.000 FT SHIPPED QTY 48.000 FT

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/PO:49377015 HT:F002524800001 PC: 4 CUSTOMER QTY: 48.000 UMLT:UNITED STATES MFG:UNITED STATES SLB/CL:224304

0005 32821 SMLSCD 4130 6736 1/2 X .083 WA

17/24 FT

CLN#

ORD QTY

INVOICE QTY 60.250 FT SHIPPED QTY

60.000 FT

60.250 FT

22.268

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

** 1 CERTS REQUIRED **
ECCN: 9A991.d Export License: NLR Expiration Date: 0
PO:49362520 HT:253636 PC: 3 CUSTOMER QTY: 60.250
MLT:GERMANY MFG:GERMANY SLB/CL:1632158

BROKERS KUEHNE AND NAGEL LTD

AREA TYPE OF PKG B CARTON

----- PACK INFO -----

1.000

PKGS GRS WEIGHT WIDTH 77.000

LENGT. 20.5000

CARTON

1.000

12.5000

qil2 Packing

CN KEY IKJ





COST NUMBER: 1203820

TIME ILEW DESCRIBLION

PO038640

SHIPPING POINT

DONNA SMALLEY

CN KEY IKJ

NEL MCL:

NET 30 DAYS

PAGE FROM: CRAN OKDEK NO:: 60645909

57.669 REQ.DATE: 12/21/17 CONFIRMED

DART AEROSPACE LTD :OT GIHS

FENGLH

COWWON CARRIER

DKEPAID

12/14/17

HAWKSBURY ON 1270 ABERDEEN ST

ONTARIO CANADA

:AIV SHIB BK:

KECEINING DHONE: KELEASE NO.: EKEICHL:

2,000 77,000

NNTOAD TYPE: NONE SPECIFIED

MIDTH

DATE FILLED

DATE SHIPPED

RT 000-

F.O.B.:

LEEWS:

CANADA

SOLD TO:

CUST ORD NO.:

SALESPERSON:

HYMKESBURY ON

1270 ABERDEEN ST DART AEROSPACE LTD

BX: CI

http://www.twmetals.com/invoice-terms.html

dil Packing





O'Neal High-Performance Metals Group

PAGE

FROM: CRAN

OKDEK NO:: 60645909

57.669 REQ.DATE: 12/21/17 CONFIRMED

DART AEROSPACE LTD :OT GIHS

ONTARIO CANADA HAWKSBURY ON ISJO ABERDEEN ST

CN KEY IKJ

57 ENGLEHARD DRIVE 12/14/17

IE880 LN

SHIB BK:

WONKOE IMB

PO038640 CUST ORD NO.: SHIPPING POINT E.O.B.: NET 30 DAYS **LEKWZ:** DONNA SMALLEY **SALESPERSON:**

CN Key IK7

NEL MCL:

PREPAID COWWON CARRIER

EKEICHI: :AIV

".noitscor location."

KECEINING DHONE: KELEASE NO:

CANADA

:OI dios

HYMKESBNBK ON

ISJO ABERDEEN ST

DART AEROSPACE LTD

COST NUMBER: 1203820

"CERTIFICATE OF CONFORMANCE"

you may telephone 610-458-1300 and we will mail or fax a copy of our current & Data and the TW Metals MSDS's heading. If you do not have web site access data can be found under the Technical Resources Tab, Product Statistics "TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS

European emergency measures for coniferous non-manufactured wood packing and China consists of manufactured wood products and complies with the records are on file at TW Metals. Packaging material for shipments to Europe inspected, and tested in accordance with the material specification. These contained in the heat/lot number referenced above has been manufactured, "TW Metals certifies that the material supplied on this purchase order and

Electronically Generated Certificate-Valid without signature Date: 12/14/17

Diversion contrary to U.S. law prohibited. with the U.S. export control laws, export administrations regulations. These commodities have been exported from the United States in accordance

PRECISION TUBE CO.



287 WISSAHICKON AVE.

OWINOW INVESTMEN		T AENDOK: LICE SHILLY #: (2806	TAM WAR		8	
IN METALS		The state of the s	CHEMICAL C		isos norr	
hb001256	h			: PASS	EDDY CURRENT	
DEC 0 4 2017	NAME OF TAXABLE PARTY.	TIVE TESTS	NON-DESTRUC			
EST REPORTS ACCEPTED BY MARKET	'IES	, FAR TAA COMPI	KS BYY COMPLIES	BYY COMBRIES' DEY	AA4 :sinemmo	
		AE LESLS	DESTRUCT			
		۷T \$T	921'E# #65'I#	629'L7 621'97	7 T	
AVERAGE (MM.)	HORDNESS	ELONGATION (%)	YIELD STRENGTH (P.S.I.)	TENSILE STRENGTH (P.S.I.)	AMPLE #	
		PROPERTIES	MECHANICAL			
II/S9/IJ	3300 FT	T-700/6C	MUJA I 1808 1-012 TT TT TT MU MD MD MD MD MD MD MD MD MD MD	TT METAL - 606 SPEC - AMS ASTM-B-Z LENGTH - 12 LGTH TOL + 12 SHAPE - ROU		
Gadding amag	Gadding VT	<u> </u>	NO.	TTGT8729G G8	O YTITMAU	
	TW METALS TOREST PARK, CONTED STATES	OT OT	8620£ A	TW METALS 175 TUBEWAY FOREST PARK, G	OT	
	STEOAPS	9401		964 FINE 001		
TUBE P/N	PRECISION	ND. NO.	RCHASE ORDER NO	CUSTOMER PURCHASE OR		
		TEST REPORT	CERTIFIED			

We hereby certify that the material has been manufactured and tested in accordance with the requirements of the applicable specifications and descriptions on Precision Tube's sales acknowledgement. During the manufacturing, testing and inspecifion, the product did not come into direct contact with mercury or any of its compounds, nor with any mercury containing device employing a single boundry containment. Test results indicate that the material is compliant with the current revision of the PoHS Directive (2011).

36.0

\$0.0

1.20

08.0

Jennifer James
Jennifer James
Ouality & Technical Lead

Hem.

31.0

62.0

Melted and Manufactured in USA QMS Registered to ISO 9001: 2008

0,40

NIN

CERTIFIED TEST REPORT

http://Online.KaiserAluminum.com



CHANDLER, AZ 85226 6573 W. WILLIS ROAD FABRICATED PRODUCTS, LLC KAISER ALUMINUM

		TW METALS INC 760 CONSTITUTIC SUITE 204 EXTON, PA 19341		A	K	TW METALS INC 27 ENGLEHARD DF EXIT 8A OFF NJ TP MONROE TWP, NJ
		SOLD TO:				:OT 9IH2
TH 000.St			224424	SO	355.000 P	
FENGIH	:HTGIW	DIAM/DAF/THKNS:	B/L NUMBER:		:YTITNAUQ	WEIGHT SHIPPED:
(PT)	1909	F00234391	02/24/2017		100	
ABAMBI	ALKON	KAISER LOT NUMBER:	SHIP DATE:		пие птем:	KAISER ORDER NUMBER:
	eqiq\edu	Drawn Seamless T	•	67814	TO THE STREET	1-74048E44M
	:	PRODUCT DESCRIPTION	созтомер РАКТ ИОМВЕР:			спатомек РО ИЈМВЕК:

Actual Physical Properties

Chemical Composition (wt%), Aluminum Remainder

Tot	E 3	IZ	BŢ	প্ৰ	ŢI	uz	CE	PM	πM	no	Бe	ŢS	LIMITS
51.0	20.0	AN	AN	AN	61.0	82.0	3E.0	1.20	91.0	04.0	07.0	08.0	mumixeM
00.0	00.0	AN	AN	AN	00.0	00.0	₽0.0	08.0	00.0	SI.O	00.0	01.0	muminiM
20.	IO.	00.	00.	00.	20.	70.	80.	86.	90.	.23	82.	62.	DIESII
				.3	gueut	niunas	A Alde	pilaaA	1			Lh	

No Weld Repair. Mercury Free. COMPLIES TO DIN EN 10204 JAN 2005 This Product Complies to FAR BAA, DFARS BAA, FAR TAA WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED. AMS4082P AMS-WW-T-700/6C ASTM B210-12 Description: OD: 0.3750"; Wall: 0.0350"; Round @

Miscellaneous Notes

TRADE AGREEMENTS). (DEARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5 MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA MANUFACTURED IN USA MELTED IN USA

Kaiser Order Number: 222468 Plant Serial: 00024251

ACCEPTED 83

E FEB 2 8 2017 G

IN METALS

103

Line Item: 00ļ

Page 1 of 2

CERTIFIED TEST REPORT http://Online.KaiserAluminum.com

ALUMINUM STODUGSS

KAISER ALUMINUM 6673 W. WILLIS ROAD CHANDLER, AZ 86226

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms &conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager

TOPT

Plant Serial: 00024251 Kaiser Order Number: 222468 Line Item: 001 Page 2 of 2

CERTIFIED TEST REPORT

http://Online.KaiserAluminum.com



FABRICATED PRODUCTS

CHANDLER, AZ 85226 6573 W. WILLIS ROAD FABRICATED PRODUCTS, LLC KAISER ALUMINUM

		TW METALS INC 50 CONSTITUTIO SUITE 204 EXTON, PA 19341		- V	K	TW METALS INC 27 ENGLEHARD DE EXIT 8A OFF NJ TP MONROE TWP, NJ
T3.000.Sr	·	SOLD TO:	017177		1 000:007	SHIP TO:
13 000 ET	- 1		227219	500	9 000.28S	151.000 LB
LENGTH	HIDIM	DIAM/DAF/THKNS:	в/г илмвек:		:YTITNAUQ	WEIGHT SHIPPED:
(91)	1909	F00252780	10/23/2017		100	224433
TEMPER:	-XOTIA	KAISER LOT NUMBER:	SHIP DATE:		LINE ITEM:	KAISER ORDER NUMBER:
	aqi9\adu	Drawn Seamless T		67814		
		РВОБИСТ БЕЗСВІРТІОМ	:AART NUMBER:	CUSTOMER		CUSTOMER PO NUMBER:

Actual Physical Properties

BEND	CON%IACS	BSENDAAH	ETONG%	XIS (KSI)	UTS (KSI)	SAMPLE#	#H8AG	BELEBBICE
A\N .	A\N	A\N	9°41	42.8	8.64	τ .	1000	E00525780

Chemical Composition (wt%), Aluminum Remainder

[D BA	CEPTE	DA	*						• əə	TEX EX	. Merc	Repair	No Weld
	whole	My -MOT	10						9	00S NA	0204 1	N EN I	TO DI	COMPLIES
1	s '					AA	T AAT	, AAB S	, DFAR	AAB AA	s to E	omplie	duct C	This Pro
	8				OIFED.	TON 2A	85P, W	0 P SMA	., Per	5.2.1	. AAA4	OT NOI	EXCEPT	ME TAKE
	0 /107	L & 100							IM BSI					4S80PSMA
- 1	d L	_	_ _				9 pun	Roi	0350.0	Mall	1. 4.091	E. 0 .8	6 : hoi	Descript
	8 17	2	- 1	-	:s	ement	unbə	A SIGE	Applie		7		7	
	WED	INE!	IAII			•								
- 1	SIAT		ACC.	00.	00.	εο.	Þ0.	60.	76.	PO.	22.	92.	65.	D20573
	00.0	00.0	AN	AN	AN	00.0	00.0	PO.0	08.0	00.0	SI.0	00.0	04.0	muminiM
	91.0	20.0	AN	AN	AN	SI.O	82.0	35.0	1.20	SI.0	04.0	07.0	08.0	mumixeM
	ToT	Ea	IZ	BŢ	qa	ĻΤ	αZ	αD	ρM	иM	no .	ә <u>я</u>	ŢS	LIMITS

Miscellaneous Notes

TRADE AGREEMENTS). (DEPRS S2S.SS2-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAR (FAR 52.225-5 MATERIAL COMPLIES WITH FAR BAR (FAR 52.225-1, BUY AMERICAN ACT - SUPPLIES), DFARS BAR MANUFACTURED IN USA MELTED IN USA

http://Online.KaiserAluminum.com CERTIFIED TEST REPORT





FABRICATED PRODUCTS

CHANDLER, AZ 85226 6573 W. WILLIS ROAD FABRICATED PRODUCTS, LLC KAISER ALUMINUM

CERTIFICATION

description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms &conditions of sale, Test reports are on file subject to examination. Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the

Hans Kattentidt, Quality Manager

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Line Item: 001

CERTIFIED TEST REPORT

http://Online.KaiserAluminum.com



FABRICATED PRODUCTS

KAISER ALUMINUM

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		ОІТС	sold to: TW METALS IIT SUITE 204 EXTON, PA 19			THE TO: TOWNETALS INC TOWNETALS INC SEROL STREAM, IL 60188 USA			
12.000 FT	ì			76897	SO	q 000.888	474.000 LB		
геиелн:	WIDTH:	3	DIAMIDAE/THKUS:	B/L NUMBER:		:YTITNAUQ	WEIGHT SHIPPED:		
9T	1909		F00250486	7102/22/60		100	224194		
:яэфмэт	VIION:	:8:	KAISER LOT NUMBE	SATAG 91H2		LINE ITEM:	KAISER ORDER NUMBER:		
	edi9\edu	JT ss	Drawn Seamle:	•	41952		1-96Z97E64M		
		:NOIT	нкорист ревски	:ABBMUN TAA	спатомек Р		CUSTOMER PO NUMBER:		

Actual Physical Properties

BEND	CON%IACS	RESIDURAH	ETONG#	ate (kei)	OTS (KSI)	SAMPLE#	#H8AG	REFERENCE
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Chemical Composition (wtw.), Aluminum Remainder

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Applicable Requirements:

This Product Complies to FAR BAA, DFARS BAA; FAR TAA WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED. Description: (OD: 0.3750"; Wall: 0.0580"; Round @ AMS4082P AMS-WW-T-700/6C ASTM BZ10-12

COMPLIES TO DIN EN 10204 JAN 2005

No Weld Repair. Mercury Free.



TRADE AGREEMENTS). (DEFRS SES. 225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5 MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA MANUFACTURED IN USA MELTED IN USA

Kaiser Order Number: 224194 Plant Serial: 00026215

ACCEPTED BY

LL LZ das

Line Item: 001

Page 1 of 2

http://Online.KalserAluminum.com





KAISER ALUMINUM 6673 W. WILLIS ROAD CHANDLER, AZ 86226

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms acconditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager





Plant Serial: 00026215 Kaiser Order Number: 224194 Line Item: 001 Page 2 of 2

CERTIFIED TEST REPORT

http://Online.KaiserAluminum.com



FABRICATED PRODUCTS, LLC KAISER ALUMINUM

GAOR SILLIW .W ET28

92238 SA	EB,	NDF	CH
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3/	SOLD TO: TW METALS INC SUITE 204 EXTON, PA 19341 USA			SHIP TO: TW METALS INC CAROL STREAM, IL
12.000 FT	-024103	227143	298.000 PCS	
FENGUH:	DIAMDAE/THKNS: WIDTH:	B/L NUMBER:	8	1
(91)	F00252480 (6061	10/16/2017	100	224304
DEWARE:	KAISER LOT NUMBER: ALLOY:	STAG 91H2	INE ITEM:	KAISER ORDER NUMBER:
	Drawn Seamless Tube/Pip		- 42252	M49377015-1" . "
	РRODUCT DESCRIPTION:	SART NUMBER:	спатомек	сизтомея Ро иимвея:

Actual Physical Properties

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Miscellaneous Notes

(DEARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAR (FAR 52.225-5 MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA MANUEACTURED IN USA MELTED IN USA

No Weld Repair, Mercury Free.

COMPLIES TO DIN EN 10204 JAN 2005

TRADE AGREEMENTS).

Kaiser Order Number: 224304 Plant Serial: 00026425

ACCEPTED BY

Line Item: 001

Page 1 of 2



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FABRICATED PRODUCTS
KAISER ALUMINUM

KAISER ALUMINUM FABRICATED PRODUCTS, LLC 6673 W. WILLIS ROAD . CHANDLER, AZ 85226

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Hans Kattentidt, Quality Manager

DIT

ACCEPTED BY

Plant Serial: 00026425

Kaiser Order Number: 224304

True Item: 001

Page 2 of 2

Benteler Steel/Tube GmbH Postfach 13 40

33043 Paderborn

Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER

Steel/Tube

Blatt: Page:

1/

4

INSPECTION CERTIFICATE EN 10204-3.1 CERTIFICAT DE RECEPTION EN 10204-3.1 ABNAHMEPRÜFZEUGNIS EN 10204-3.1

EN 10204:2005-01

TW Metals Benteler Strel/Tube GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

760 Constitution Drive EXTON PA 19341 The Aboretum, Suite 204

> Kunden-Bestell-Nr.: No. du document: Document No.:

Dokument-Nr.:

41-991327/001/P

Purchase Order No.:

No. de commande du client:

No. de commande Benteler: Benteler Order No.: Benteler Auftrags-Nr.:

Versandanzeigen-Nr.:

Produkt: No. d'avis d'expédition: Dispatch Note No.: NAHTLOSE STAHLROHRE SEAMLESS STEEL TUBES

Product:

TUBES D' ACIER SANS SOUDURE

46004784TW M49362520

Hersteller:

Warmrohrwerk/Zleherei

Inspection No.: No. du certificat: Prüf-Nr.:

4185829

Stempel des Abnahmebeauftragten: Stamp of the inspection representative:

×

1632158 Producteur: Manufacturer:

> (PED 2014/68/EU CERTIFIED BY TUEV NORD SYSTEMS) DIN EN 150 9001, ISO/TS-18949 CERTIFIED BY TUEV NORD CERTI

Marque du producteur: Manufacturer's brand: Herstellerzeichen:

Poinçon du contrôleur:

Stahlerschmelzungsverfahren: Steelmaking process: ELEKTROSTAHL **ELECTRIC FURNACE**

Procede d'élaboration de l'acier: FOUR ELECTRIQUE

AMS-T-6736B-08 Type 1, ASTM-A 519-2006, MIL-T-6736B Type 1, AMS6360 Rey, M, AMS 2301K

straightness acc. to customer request, AMS 2253E-83, Aircraft Type, Seamless, Cold Finished

Stahlsorte:

GRADE 4130

Dimensions-tolérances: Dimensions-tolerances: Maße - Toleranzen Terms of delivery: Lieferbedingungen:

Conditions de livraison:

Nuance d'acier: Steel grade:

Delivery condition Lieferzustand:

Condition N

État de livraison:

Produktkennzeichnung:

FSD: BENTELER AMS6360M-AMS-T-6736 B 1-MIL-T-6736 B 1-AMS 2301K 4130 Condition N HEAT-NO.

CD AQ S DIMENSIONS WA GERMANY

Marquage du produit:

AEZ = Āizzīntenbeschriftung, Eiching ink marking, Gravure à l'encre . FK = Farbkenoveichnung, color marking, marquage par couleur . FS = Farbschablonierung, paint stencilling, marquage par pointure . FSD = Farbstrahldrucker, Color jet primer, imprimante à jet d'encre de couleur . LK = Laserkennzeichnung, Marquage laser . PKE = Etikettenkemnzeichnung, tag marking, marquage sur étiquette . PS = Prägestempel, die stamp, marquage par poinconnage . TS = Tintenstrahltennzeichnung, ink jet spray marking, imprimante à jet



Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel:: +49.5254.81-0 Fax: +49.5254.13666

BENTELER V

Steel/Tube

0008 125 (0.5)	Poste Nombre Dime	tem Number Dimension	ABNAHMEPRÜFZEUGNIS EN INSPECTION CERTIFICATE EN 10204-3.1 CERTIFICAT DE RECEPTION EN 10204-3.1
0.500" O.D. * 0.083" WT 20 FT - 24 FT	Dimensions	nsions	ABNAHMEPRÜFZEUGNIS EN 10204-3.1 INSPECTION CERTIFICATE EN 10204-3.1 CERTIFICAT DE RECEPTION EN 10204-3.1
T	feet	١	
2	Lon		Dokument-Nr.: Document No.: No. du document:
2500,56	Longueur totale feat	Gesamtlänge "Gewicht	
926	Poids	. Gewicht	41-991327/001/P
253636	No. de coulée	Schmelzen-Nr.	Prűf Insp No.
	Pression d'épreuve	'	Prūf-Nr.: Inspection No.: No. du certificat:
	Pression d'épreuve Série de no. des tubes	Rohr-NrGruppe	·
	Multiple lengths Longueurs multiples	Vielfachlängen	Blatt: 2/ 4 Page: Page:

0] / Heat analys	is [%] / Analys	e sur coulée	[%]							
Item Heat No.	C	S	MN	70	s	CR	MO	Z	CU		
Poste No. de coulée											×
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Con											
Prüfergebnisse / Test results / Résultats des essais	sults / Résultar	ts des essais									
Die Rohre wurden zerstörungsfrei geprüft: The tubes are non destructive tested:	störungsfre	geprüft:		ET-test: acc	. to ASTM- with rotatir	A 450; ET	 Test methodologies, according 	nod: acc. to	ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for imperf. ET-test: ET with rotating pancake coils; according to EN 10246-3; imperfections:	ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for imperfections; ET-test: ET with rotating pancake coils; according to EN 10246-3; imperfections:	PASSED
Les tubes ont passé un essal non destructif:	sal non destruc	df:		Notch depth: 0,30 n width (max. 50 mm)	1: 0,30 mm 50 mm)	; notch wid	th <= not	ch depth;	notch length m	Notch depth: 0,30 mm; notch width \leq notch depth; notch length min. 2 x transducer width (max. 50 mm)	
Augensichtkontrolle:		PASSED		Materialverwechslungsprüfung:	vechslungs	prüfung:	PASSED		Maßkontrolle:		PASSED
visual mapaccion:				Material conformity test:	mity test:				Dimensions examination:	ination:	

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Material conformity test: Vérification de la nuance:

Dimensions examination: Vérification des dimensions:

Examen visuel:

Die Probennahme erfolgte an Vielfachlängen.
The sampling was carried out on multiple lengths.
L'echantillonage etait realise aux longueurs multiples.





Postfach 13 40 Benteler Steel/Tube GmbH

33043 Paderborn Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER V

Steel/Tube

INSPECTION CERTIFICATE EN 10204-3.1 CERTIFICAT DE RECEPTION EN 10204-3.1 ABNAHMEPRÜFZEUGNIS EN 10204-3.1

Dokument-Nr.: No. du document:

41-991327/001/P

Inspection No.: No. du certificat: Pruf-Nr.:

Page: Blatt: Page: 3/

4

Zugversuch längs bei RT, Voliprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinale à TA, Eprouvette a section complete

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+24
134
125
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KSI
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Résistance à la traction Allongement
infilians ausua
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Randentkohlung / Surface decarburization / Décarburation superficielle

Pos. / Item / Poste: 0008

acc. to AMS-6360, partial decarburization outside max. 0.014 in, partial decarburization inside max. 0.014 in, partial decarburization; partial decarb. out. max.: 0,356 mm; partial decarb. ins. max.: 0,356 mm decarburization outside and inside max. 0.018 in, partial decarburization outside and inside max. 0,457 mm, without total

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0008

Certificate remarks: The steel grade corresponds to MIL-T-6736B, AMS 6360M, material free from mercury contamination, FAR BAA: 52.225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY, FAR TAA: 52.225-5 CAN COMPLY, No weld repair has been carried out,

Country of origin of the material and heat: Germany, Aircraft quality steel acc. to AMS 2301K; see appendix page 1 of 1.

Pos. / Item / Poste: 0008

Macroscopic examination: acc. to ASTM-E 381

Pos. / Itom / Poste: 0008

Magnetic particle inspec.: acc. to AMS 2301K/ASTM-E 1444, on prematerial

Pos. / Item / Poste; 0008

Grain size: acc. to ASTM-E 112; Grain size and finer: 5; Grain size: Longitudinal structure micrography, On prematerial

Verkäufer(in) / Sales Personnel / Personne chargée: Mr Schwarz, Tel.: 05254 81-204311, Fax: 204391





33043 Paderborn Benteler Steel/Tube GmbH Postfach 13 40

CERTIFICAT DE RECEPTION EN 10204-3.1 **INSPECTION CERTIFICATE EN 10204-3.1** ABNAHMEPRÜFZEUGNIS EN 10204-3.1 Tel.: +49.5254.81-0 Fax: +49.5254.13666

> Steel/Tube BENTELER V

41-991327/001/P

Dokument-Nr.: No. du document: Document No.:

Prüf-Nr.:

No. du certificat: Inspection No.:

Page: Blatt: Page: 4/

4

Paderborn Schloß Neuhaus, 07.03.2017, TEL.: 05254.81-201768 FAX: 05254.81-201752

Abnahmebeauftragter Inspection representative Contrôleur

TW METALS

MAR 28 17

CCEPTED BY

i. A. THOMAS GOLLAN / Tat

Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature. We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature. Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.



33104 Paderborn Tel.:49.5254.81-0 Fax: 49.5254.13666 Benteler Steel/Tube GmbH Residenzstraße 1

Steel/Tube BENTELER ♥

Abnahmeprüfzeugnis EN 10204-3.1 / Anhang Certificat de réception EN 10204-3.1 / appendice Inspection Certificate EN 10204.3.1 / appendix

Dokument-Nr. No. de document: Document No.:

41-991327/001/P

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von ,

Halbzeuguntersuchung: Stahlsorte 4130 / Semi finished product examination: grade 4130 / Produit semi-fini: nuance 4130

	Decarbunization Depth	253636		Schmelzen-Nr. Heat No. Coulée No.
		008		Position Item Poste
	Outside 0,000 mm Inside 0,050 mm	ဖ	min. 5	Komgröße Grain size Grosseur de grain (ASTM-E 112)
	Inside 0,050 mm	44	J(5/16") min. 35 HRC	Härtbarkeit (min Hardenability (m Trempabilité ((ASTN
		34	J(8/16") min. 28 HRC	Härtbarkeit (min. Anforderungen) Hardenability (min. requirements) Trempabilité (exigence min.) (ASTM-A 255)
		0,020	F max. 0,34	Magnetpu Magnetic part Essai à la pou (AMS 2301 k
MAR 28 17 PE	WINETALS	0,015	S max. 0,25	Magnetpulverprüfung Magnetic particle inspection Essal à la poudre magnétique (AMS 2301 K/ASTM- 1444)
		\$2	max. S 2	E S
		R1	max. R 1	Makroätzung Macrostructure test Essai de macrostructure (ASTM-E 381)
		C 2	max. C 2	test ucture

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

Paderborn Schloß Neuhaus, 07.03.2017 Tel.: (0)5254.81-201760 Fax: (0)5254.81-201752

Inspection representative Contróleur Abnahmebeauftragter

Thomas Gollan



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Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

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PURCHASE MATERIAL: AISI 4130N SEAMLESS STEEL TUBING

SPECIFICATION:

PART NUMBER:

MIL-T-6736 OR AMS 637 (6360) 6361, 6362, 6373, 6374 M4130N | TD.DDD | W.TTT |

WHERE: "D.DDD" = OUTER DIAMETER (IN INCHES) AND ".TTT" = WALL THICKNESS (IN INCHES)

DIA. WALL

EG. 3/4" TUBING WITH .035" WALL = M4130NT0.750W.035

ELEASE 2012 -04- 16

REV. B SHEET 1 OF 1 12.04.02 01.05.16 DART AEROSPACE LTD
HANKESBURY, ONTARIO, CANADA
DRAWING NO.
F
M4130N-T
SHEE COPYRIGHT © 2001 BY DART A EROSPACE LTD
This producting plants with separate production in Expenses onem
text for water for have needing concern concern the production of the JB BY RP B REFORMAT DWG TO ACCOMODATE ADDITIONAL TUBE DIAMETERS AND WALL THICKNESS: STEEL TUBING DESCRIPTION DATE 12.04.02 NEW ISSUE DESIGN
DRAWN
CHECKED
MFG. APPR.
APPROVED
DE APPR. REV.

Ω

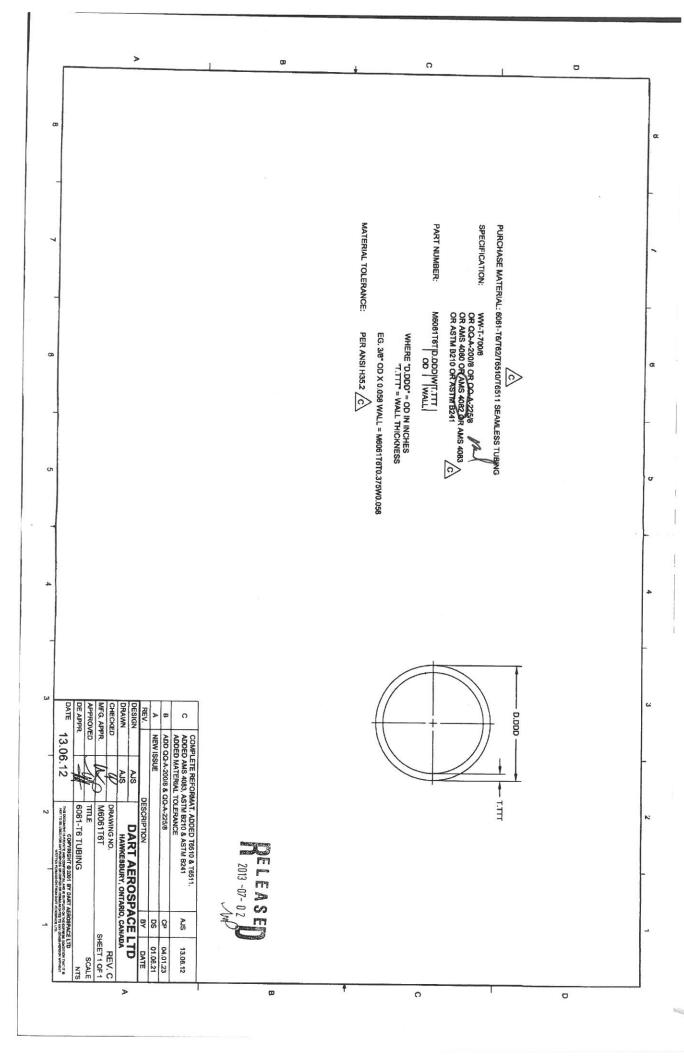
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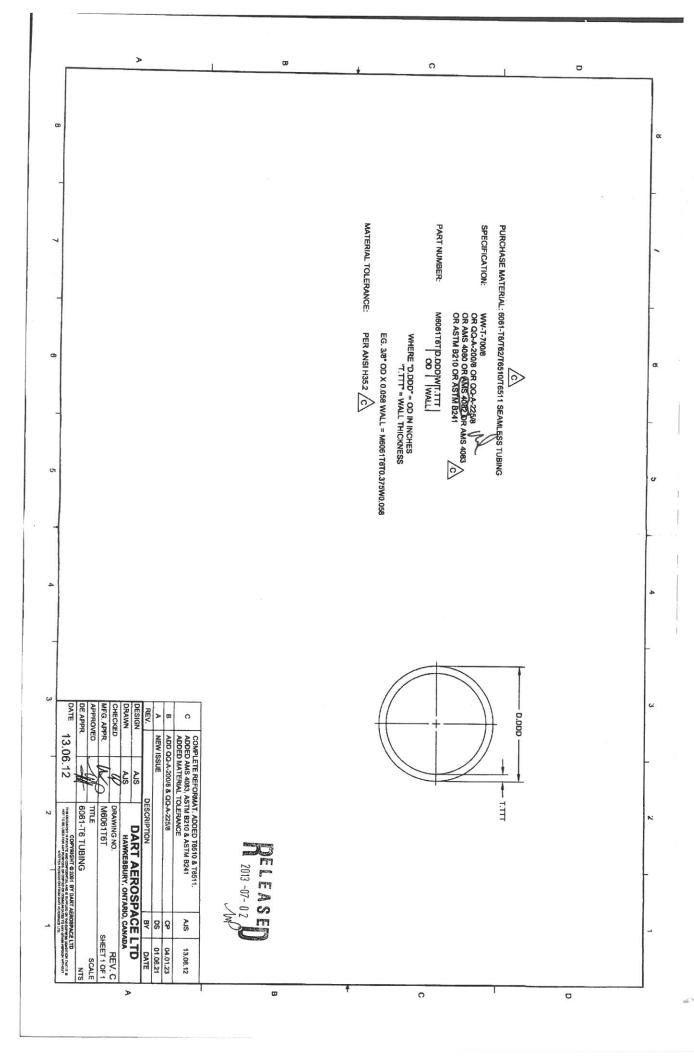
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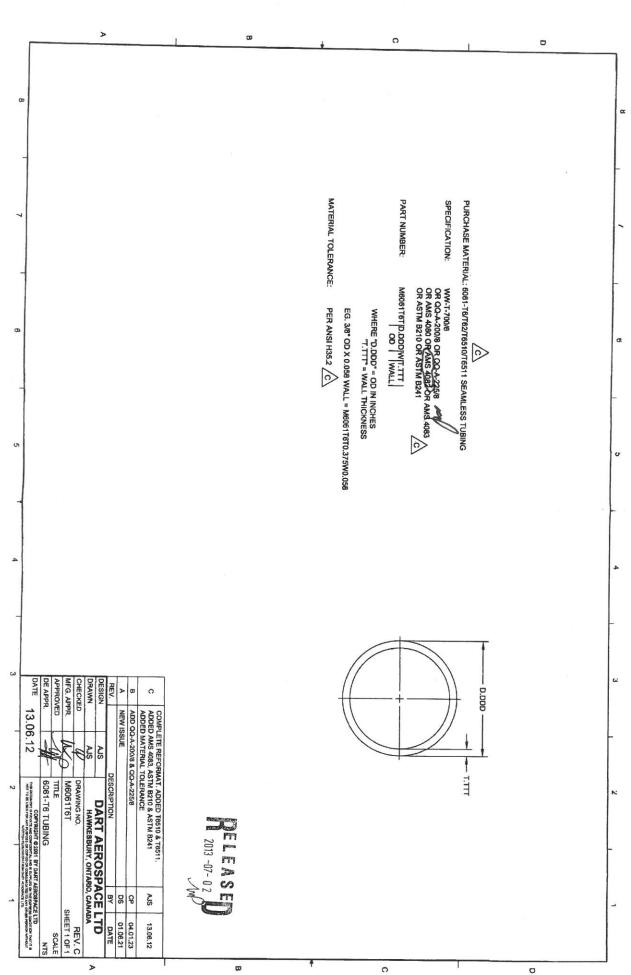
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